

REMARKS

Telephone Interview:

A telephone interview was conducted on April 23, 2003, among Examiner Davis, Examiner Lankford, Angela Dallas, Michael Tompkins, and Bill Barclay. The courtesy extended by the Examiners to the representatives for Applicant was greatly appreciated. During the interview, remaining issues under 35 U.S.C. § 112, second paragraph and 35 U.S.C. § 103 were discussed.

It is believed that the amendments and remarks provided herein are consistent with the discussion in the telephone interview, and it is submitted that the claims are in a condition for allowance. Briefly, as discussed in the telephone interview with the Examiners, Claim 1 has been amended to overcome the Examiner's rejection under 35 U.S.C. § 112, second paragraph, by removing the phrase found indefinite by the Examiners, and by including a phrase which more particularly describes the process of the invention and which clarifies that if any organic solvent is present in the process, it is not functioning as an extraction solvent as a primary means of obtaining the lipid.

As was discussed during the telephone interview, the inventors have discovered a method for recovering lipid from microorganisms without using solvent extraction as the primary mechanism. More specifically, in the event that organic solvents are present in the process, they are *not used as extraction solvents* as a primary means for recovering lipids. While not wishing to be bound by any theory, it is believed that the primary recovery mechanism in the claimed process is the breaking of an emulsion, specifically, an aqueous/lipid emulsion that is stabilized by the presence of the proteins from the cellular debris. By breaking the emulsion, the lipid and aqueous phases can be easily separated by density differences, such as by centrifugation.

Claim Amendments:

Claim 1 has been amended to remove the phrase "solventless extraction process" and to instead clarify that the process is conducted "while avoiding organic solvent extraction to obtain said lipid". Support for this amendment is found in the specification, for example, on page 6, lines 11-14; and page 22, lines 1-2. Claim 1 has also been amended to substitute the phrase "aqueous phase" for "aqueous solvent". Support for this amendment is found in the specification, for example, on page



8, lines 7-8 and lines 16-17. Support for conducting the process in a medium that comprises less than about 5% of an organic solvent is found in original Claim 47, and on page 6, line 18.

Support for the amendment to Claim 52 is found on page 6, line 16; and page 11, lines 15-22 (Examples).

Support for new Claim 58 is found in original Claim 1, in the specification as described above for amended Claim 1, and in the specification on page 8, lines 8-18.

The amendments to all other dependent claims were necessary for consistency and proper antecedent basis in view of the amendments to Claim 1.

Objection to Claim 52:

The Examiner has objected to Claim 52 as being improperly dependent for failing to further limit the subject matter of Claim 1. Claims 1 and 52 have been amended in a manner that is believed to render this objection moot.

Rejection of Claims 1-19 and 47-56 Under 35 U.S.C. § 112, Second Paragraph:

The Examiner has rejected Claims 1-19 and 47-56 under 35 U.S.C. § 112, second paragraph, contending that these claims are indefinite for use of the phrase "solventless extraction process" in Claim 1. Dependent Claims 4 and 47-50 are rejected as being confusing for referencing a solvent and depending from Claim 1.

The phrase found objectionable by the Examiner has been removed from the Claim 1 and replaced with language which is believed to clarify the present invention. During the April 23 telephone interview, the Examiners indicated that language similar to that presented in this amendment would be sufficient to overcome the rejection. The amendment to Claim 1 is also believed to render moot the rejection of dependent Claims 4 and 47-50.

In view of the foregoing remarks, the Examiner is respectfully requested to withdraw the rejection of Claims 1-19 and 47-56 under 35 U.S.C. § 112, second paragraph.

Rejection of Claims 1-6, 14 and 47-52 Under 35 U.S.C. § 103:

The Examiner has rejected Claims 1-6, 14 and 47-52 under 35 U.S.C. § 103, contending that these claims are unpatentable over Gudín. Specifically, the Examiner asserts that Gudín teaches a phase separation, with or without an aqueous solvent, where the lipid phase is separated from the solid cellular residues and the aqueous phase. The Examiner contends that although Gudín does not teach an emulsified lipid in solution whereby it becomes substantially non-emulsified, Gudín teaches precipitation of the lipid which becomes substantially emulsified.

This rejection is respectfully traversed. As discussed above and in the April 23 telephone interview with the Examiners, it is believed that the claims as currently amended clarify the present process to address the rejection under 35 U.S.C. § 112, second paragraph. In clarifying this process for the Examiners, and by clarifying for the Examiner what is actually taught by Gudín, it is believed that the rejection over Gudín is now clearly moot. More particularly, as discussed previously, Gudín teach a traditional solvent extraction process for liposoluble and hydrosoluble compounds, wherein liposoluble compounds are recovered by conventional extraction into an organic solvent. As discussed previously and in the April 23 interview, the claimed process is a phase separation process and does not use solvent extraction as the primary means to recover lipids from the microbial cells, even if a small amount of organic solvent is present. Therefore, the process described by Gudín is clearly distinct from the claimed process.

In view of the foregoing remarks, the Examiner is respectfully requested to withdraw the rejection of Claims 1-6, 14 and 47-52 under 35 U.S.C. § 103.

Rejection of Claims 1-10, 12-19 and 47-52 Under 35 U.S.C. § 103:

The Examiner has rejected Claims 1-10, 12-19 and 47-52 under 35 U.S.C. § 103, contending that these claims are unpatentable over Gudín in view of Barclay. Specifically, the Examiner cites Gudín for the reasons of record and further contends that Barclay teaches a process where microorganisms of the order Thraustochytriales are cultured to produce omega-3 HUFAs, and solubilization of proteins in fermentation broth.

This rejection is respectfully traversed. As discussed above, Gudín does not teach or suggest the claimed process. Barclay does not make up for the deficiencies of Gudín for the reasons of

record and therefore, the combination of Gudín and Barclay fail to teach or suggest the claimed invention.

In view of the foregoing remarks, the Examiner is respectfully requested to withdraw the rejection of Claims 1-10, 12-19 and 47-52 under 35 U.S.C. § 103.

Rejection of Claims 1-9, 11, 14 and 47-52 Under 35 U.S.C. § 103:

The Examiner has rejected Claims 1-9, 11, 14 and 47-52 under 35 U.S.C. § 103, contending that these claims are unpatentable over Gudín in view of Wagner. Specifically, the Examiner cites Gudín for the reasons of record and contends that Wagner teaches a process for isolation of lipids from microorganisms wherein the pH of the culture is adjusted to pH3-8 by addition of alkaline compounds.

This rejection is respectfully traversed. As discussed above, Gudín does not teach or suggest the claimed process. Wagner does not make up for the deficiencies of Gudín for the reasons of record and therefore, the combination of Gudín and Wagner fail to teach or suggest the claimed invention.

In view of the foregoing remarks, the Examiner is respectfully requested to withdraw the rejection of Claims 1-9, 11, 14 and 47-52 under 35 U.S.C. § 103.

It is submitted that the claims are in a condition for allowance. In the event that the Examiner has any further concerns or questions regarding the claims, she is encouraged to contact the below-named agent at (303)863-9700.

Respectfully submitted,

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